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CLINICAL OBSERVATIONS ON FRACTURES OF THE NECK OF THE FEMUR.

BY BARON DUPUYTREN.

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AGE at which such fractures occur.—Fractures of the neck of the femur have attracted so much attention of late years, that we are told in most *ex professo* treatises on such subjects, that they are as well understood as those of other parts of the thigh-bone. Those, however, who have witnessed the practice of the Hôtel Dieu during the past winter, must be aware that much additional light has lately been thrown upon the subject. If you examine, said M. Dupuytren, the age of different individuals who are at this moment in our wards with fractures of this part, you will perceive that they are all past 50 years of age; and among those to be hereafter pointed out to you, you will remark that there are no children, and in general very few adults. But in both sexes you will find this accident more common after 60 years of age. Never in any instance were the predisposing and exciting causes more conspicuous than here. I have never seen fracture of the neck of the thigh in an infant, and very rarely in a young person. Sabatier, however, in his interesting memoir in the transactions of the old Academy of Medicine, mentions the case of a youth of 15, who had a fracture of this kind. These lesions, on the contrary, become more frequent as life advances, and are most common between 70 and 80 years of age. It is impossible but that there must be some cause for this difference in the period of fracture of the neck of the femur at different epochs of life.

Predisposing cause.—This cause is well ascertained, and resides in the anatomical disposition of the parts, which is not the same at different ages. The neck of the femur, in fact, has not at all periods of life the same direction; and this disposition of the parts is important to be known. In early life the axis of the neck approaches to that of the body of the femur; the angle which it forms being the most open possible. The great trochanter makes but a very small projection; and we shall see by and by that falls upon this part are the most frequent causes of fracture of the neck of the femur;—that the frequency of the accident is in direct proportion to the extent to which the trochanter projects;—and that such projection is in direct proportion to the length of the neck of the bone, and the greater or smaller angle which it forms with the bone. Now we know that the trochanter lies deep in children, and that it hides itself, so to speak, behind the prominence of the *os coxae*; the result of this is, that in falls on the side the blow does not come upon it,

and consequently the risk of the fracture is diminished. Another anatomical disposition renders fracture of the neck still more difficult. The shorter the bone is, the less of a right angle it makes with the body, and consequently the more it approaches the direction of the axis of the femur, and the causes of fracture have therefore less influence on the neck. There is also another reason why fractures of the neck of the femur are rare at an early age—namely, the great flexibility of the bony tissue, in consequence of the abundance of organic matter in the bone. In adult age, fracture of the neck of the femur is rare, but less so than in infancy; the earthy matters are more abundant than at an earlier age, but less so than they subsequently become. The neck also presents a different disposition: it is larger, and the angle which it forms with the body is much more marked than in the child. There results from this more projection of the great trochanter, and consequently more purchase for the causes tending to produce fracture, to act upon. This greater length of the neck of the femur, however, and this projection of the trochanter, vary further according to sex and individual peculiarities. Women have the neck of the femur longer, and consequently a more projecting trochanter, than men. The nearer, in the male sex, the formation approaches to that proper to the female, the more risk is there of this fracture.

If the relief of the muscles of the haunch in men presents an obstacle to the production of fracture, by diminishing the effect of falls upon the great trochanter, the thickness of the layer of fat in women fulfils the same indication: but when there is much emaciation present, women become more liable than men to the accident. Let us next inquire how it happens that old men are so much exposed to this kind of fracture. At this period of life the pelvis has acquired all its breadth; the trochanter major is more projecting; the neck of the femur longer, and inclined to a right angle. Besides, the skeleton of the old man weighs much less than that of a young adult, which depends upon the bones having lost much of their organic substance,—having a greater quantity of earthy matters, and being thus also more friable. In aged women, while the anatomical disposition retains the peculiarities formerly mentioned, the friability is even more marked than in men. Accordingly, at the Salpêtrière, which is an asylum for old women, there are more cases of this nature than at the Bicêtre, which is a receptacle for old men. These considerations are of importance in reference to the theory of fractures. Thus in the child the cure may be effected in three weeks or a month, while in the adult it will require a much longer period; and in those advanced in life, a hundred or a hundred and twenty days are required.

If we recapitulate briefly what we have said with respect to the predisposing causes of this fracture, we shall see that shortness of the neck of the femur, very considerable openness of the angle which it makes with the body, deficiency in the projection of the great trochanter, flexibility of the osseous tissue, and abundance of adipose matter, render it almost impossible that fracture of the neck of the femur should take place in children. In women, the less considerable obliquity of the neck relatively to the axis of the body of the bone, the length and prominence of the great trochanter, explain the greater frequency of this accident in them than in men. Sir Astley Cooper has said that fracture of the neck

of the femur rarely took place before the age of fifty ; but there are many exceptions to this rule. There are also some other particular circumstances which predispose to fracture of the neck of the femur—such as rachitis and cancerous diathesis ; but as these are common to all parts of the osseous system, it is unnecessary to dwell upon them here.

Exciting causes.—What, then, are the exciting causes of this fracture? Almost all the patients whom we interrogate reply that they have fallen on the great trochanter, and in such manner that they have been unable to protect themselves with the arm, as is usually done instinctively. The frequency of this cause has been recognized by all authors. Thus of thirty-six cases observed by Dessault, twenty-four were produced by falls of this kind. In infants and young persons who have fallen on this part, and who have been preserved from fracture, we meet with decoliation of the epiphysis. Falls upon the trochanter are, however, far from being the sole cause of fracture of the neck of the femur ; I shall point out others which play an important part : but I must first make a remark which has excited little attention ; namely, that at the same time the patients fracture the bone, they bruise the external parts. I this morning examined a woman who stuttered, and answered badly the questions put to her ; but on touching the great trochanter it gave her much pain, although the limb was not moved ; and this led me to examine the part, when I found a large ecchymosis upon it. This fact is of some importance in directing us to the part which the patient has struck, when he is himself unable to give an account of his fall.

I have said that other causes might produce fracture of the neck. This is, in fact, what happens in a fall on the soles of the feet, or still more upon the knees ; but in both cases it is necessary that the muscles be stretched and inflexible. Sir Astley Cooper has observed that in London, fracture of the neck of the femur often arises from a false step off the edge of the pavement. Under such circumstances the head of the femur impinges strongly against the cotyloid cavity : from this there results an effort tending to diminish the angle which the neck makes with the body of the femur. I have also frequently observed a depression of the cotyloid cavity produced by the head of the femur, in consequence of a fall on the feet or knees.

It is not from this cause, however, but from a fall on the haunch, that this accident generally happens. In this case the neck is placed between two opposite forces ; the head of the bone being pressed on the one side by the weight of the body, while the great trochanter is opposed by that against which it strikes, and the point which most usually gives way is that immediately under the head of the bone, at the upper and internal part of its neck.

It has also been thought that this fracture may arise simply from a muscular exertion, and a case is quoted in which this is said to have taken place in a negro affected with tetanus.

This fracture may likewise arise from causes directly applied. These are usually projectiles—such as cannon-balls, several instances of which I saw after the days of July.

Diagnosis.—The diagnosis of this kind of fracture is not made without difficulty. It sometimes happens that a fall on the haunch,

accompanied by bruising of the muscles and joints, imitates this fracture; while, on the other hand, the same cause may produce an actual solution of continuity, and yet the patient be able to run and walk. It is thus that persons have been known, after they had fractured the neck of the femur, to be able to reach home without presenting any shortening: it is thus that displacement of the fragments does not take place till after some hours, or even many days, either in consequence of some movement on the part of the patient, or of the examination made with a view of ascertaining the nature of the malady. Before we proceed, let us say a few words with regard to the cause of this consecutive displacement.

Secondary displacement.—It is known, that at the first period of its formation, the callus of long bones often yields, and produces deformities, when a perfect cure has been expected. Who has not seen oblique fractures of the femur give way under the weight imposed upon it when the patient began to walk again, at a time when all risk seemed to be at an end? The same thing happens in fractures of the neck of the femur. At the end of two or three months the provisional callus yields beneath the weight when the patient rests upon it, and shortening is the result. I have seen this at the end of two, three, and four months. It is therefore necessary that patients should be controlled by the proper apparatus, during 100, 120, or 140 days, or even more.

The weight of the limb, and still more that of the body, on the broken part, is to be regarded as the great cause of displacement, whether primitive or consecutive. But another active power in producing displacement consists in the prolonged action of the cause which has given rise to the fracture. It sometimes happens that it buries the upper fragment in the thickness of the spongy tissue of the superior extremity of the lower fragment, and consolidation takes place in this situation rather quickly. Numerous anatomical preparations in the museum of the Hôtel Dieu exhibit this phenomenon, and sufficiently demonstrate the reality of its existence. Lastly, there exists another cause of displacement in fractures in the neck of the femur—namely, muscular action.

The primitive symptoms take place when, in a fall upon the heel or the knee, the shortening and displacement take place at the moment. In this case it is clear that, the upper fragment remaining in its place, the lower one is pushed up by the weight of the body. But a vertical fall is the least common cause of fracture of the neck of the femur; and when, as is most common, the blow is received on the trochanter, the cause tends not to shorten but to lengthen the limb. There exists, then, another cause of this shortening, which has until now been but little understood. It depends upon the adductor muscles, which, being designed to carry the limb outwards when it has rotated, are inserted on one side in the ischium, and on the other terminate behind and along the *linea aspera* of the femur. It is on these that the displacement, and, in part at least, the shortening, depend.

When there is displacement, the fracture is always easily recognized; but when this is not the case, the nature of the mischief may be suspected—without, however, being placed beyond doubt. I suppose that the symptoms are well characterized; that there is shortening, displacement of the limb outwards, and inability on the part of the patient to raise

himself : it is necessary then to inquire if the limb preserves this shortening, or may be made to lose it by extension, and if the great trochanter turns on the axis of the femur, or on the extremity of the lever.

If the shortening is only some lines, it is difficult to distinguish it from that which is produced by an upward movement of the pelvis, caused by the contusion : the diagnosis becomes more evident if it extends to half an inch or more. Displacement, however, may also depend on luxation of the head of the femur, or upon an ascent of the pelvis. In luxation forwards, the head of the femur passes on the horizontal branch of the os pubis—then there is shortening ; but the cause is detected by the hard tumor which may be felt to roll when the femur is moved. In luxation into the sub-pubic region the member is also turned outwards, but it is elongated ; and there is in this situation an enlargement and unusual tension of the muscles.

In luxation upwards and outwards, the head of the femur is in the external iliac fossa : the limb is shortened, but the point of the foot and the patella are turned inwards, the heel being thrown out.

There is, finally, a luxation downwards and backwards, which I have only observed two or three times : the limb is then turned inwards, and sometimes a little elongated, and it cannot be brought into its ordinary state except by the effort of reduction, and, once reduced, the displacement does not again recur. Thus, the distinctive character is as follows :—shortening produced by a fracture yields to the smallest effort at elongation : shortening produced by a dislocation is more difficult to remove, but, once reduced, the deformity disappears.

Let us now inquire what are the material effects of these fractures upon the bones, beginning with the glenoid cavity. I have found this cavity driven in several times by the head of the femur : this accident was produced by a fall on the feet or knees. In this case, the head of the femur impinges with violence against the bottom of the cavity, and, being the more resistant, breaks it. The most remarkable case which I have observed was this : the bottom of the glenoid cavity had been driven in, and the head of the femur, which remained entire, had passed completely into the pelvis ; the neck, which had not experienced any solution of continuity, was so firmly locked in this accidental opening, that it was very difficult in the preparation to disengage it, and thus reduce this new kind of dislocation. In other cases, the cotyloid cavity is broken without the head of the bone being displaced ; but the most common effect of the fracture is to be seen at the upper extremity of the femur in the radiated comminution of the head of the bone, the neck remaining entire. The most common cause producing this accident is a gun-shot wound acting directly on the part ; though it also arises from falls on the great trochanter, and even on the soles of the feet.

The neck, however, is much more frequently the seat of fracture, because it forms a lever. Its diminished size towards its middle part also contributes to the production of the fracture. This may take place from below upwards, or from above downwards, depending upon the manner in which the fall occurs ; but usually it is at the base of the neck that the fracture takes place : there are, however, infinite varieties in this respect.

M. Dupuytren's Opinion of Sir Astley Cooper's Views.

I request you to observe, that according to the seat of these fractures they are called intra-capsular, or extra-capsular; and it is a distinction which has been much dwelt upon, because many practitioners think that it is difficult, or impossible, that the consolidation of the fracture can be effected when it has taken place within the capsule; while they admit that it is possible, and even easy, when it has taken place without the capsule. Astley Cooper, whose authority is so imposing in surgery, says expressly, that in all cases of transverse fracture of the neck of the femur within the capsular ligament, which he has had occasion to examine, he has never found bony callus; and he is persuaded that it is impossible; he has also made experiments upon living animals, which have confirmed him in his opinion; and the English surgeons have equally adopted the doctrine of their countryman.

But to the facts which they adduce in support of this non-consolidation, numerous facts of an opposite nature may be advanced. A considerable number of anatomical preparations show intra-capsular fractures exceedingly well united; and those which exist in the cabinets of the faculty at Paris, and the school at the Hôtel Dieu, prove that this consolidation, with or without deformity, is real. Sir Astley Cooper has probably only seen fractures of the neck of the femur which have not been cured, which have been treated ill, or not treated at all. This is the only way of explaining the opinion of the English surgeon, which is evidently erroneous. An examination, however, of these anatomical preparations, though evidently calculated to convince us of the reality of this union of fracture within the capsule, does not appear to have produced this effect on the other English surgeons who have visited our museum. Mr. Cross says he has attentively examined the preparations in the School of Medicine at Paris, and that none of them appear to him calculated to prove that bony union ever takes place, when the head has been completely separated from the capsular ligament. When one has seen the preparations at the Hôtel Dieu, which every person may examine at leisure, if he then denies the possibility of consolidation within the capsule, of a surety I know not of what nature the proofs would require to be to produce conviction. For myself, I regard this consolidation as demonstrated, despite of what the English surgeons say.

Of the indications of Cure in Fractures of the Neck of the Femur.

At first sight one might suppose that it was the same in fractures of the neck of the thigh-bone as in other solutions of continuity—that it was sufficient to replace the fragments and maintain them in contact. But how many difficulties present themselves? How are fractures of this kind to be reduced? Are we to use powerful extension and counter-extension? Certainly not; because we should thus increase the tension of the muscles, which is already very great. In luxations this may be effected by diverting the attention of the patient, and seizing that moment to produce the reduction. But in fractures this cannot be done, because the attention of the patient is concentrated on the injury. Another method of overcoming muscular action is to place the limb in a state of flexion, as recommended by Pott in fractures generally. I

believe I am the first who applied these rules to fracture of the neck of the femur. I suppose, that, in a case of this kind, extension and counter-extension have been used : it is evident that, if the limb be placed in a state of flexion, no difficulty is experienced in overcoming the displacement as to length and turning. But how are the fragments to be kept in contact ? I suppose that the fracture of the neck of the femur is transverse, and that this part is divided into two halves ; it may then easily be reduced ; but the difficulty is to maintain it so, because the fragments are not placed fronting each other. Suppose, now, that the fracture is oblique ; if the patient attempts to walk, the lower fragment impinges slightly upon the upper one : this fragment, then, will offer some obstacle to its displacement ; so that this is less easy than in a perpendicular fracture.

The general indication, then, is to reduce the fragments, and keep them in contact ; and the principle established by Pott fulfils this purpose, by preventing the muscles from contracting ; but, in order to obtain consolidation, it is necessary to employ at least twice as long a time as in fractures of the body of the bone ; while it is necessary to add twenty, thirty, or forty days more, in order to obviate the risk of displacement occurring when the patient begins to walk. If this treatment be pursued, I venture to assert that secondary displacement scarcely ever occurs,—that, when it does happen, it is extremely slight.

The best method of effecting reduction of fractures in general, and that of the neck of the femur in particular, is to diminish the resistance of the muscles, by placing them in a state of relaxation or demi-flexion, as you see us do every day, in the following manner :—The patient being laid on his back, and his pelvis fixed by means of assistants, the thigh is bent on the abdomen, by raising it, and making moderate traction ; the limb is also bent upon the thigh. Scarcely is this done, when, without difficulty and without effort, the limb resumes its ordinary length, and the foot its natural direction.—*Lon. Med. Gaz.*

FORCEPS FOR THE SAFE EXTRACTION OF STUMPS OF TEETH.

BY J. GLASFORD SHEPHERD, DENTIST, M.R.C.S.

SIR,—I shall offer no apology for sending you the following remarks, as I consider it a duty to make known to the profession and the public any improvement in a branch of surgery at present so little understood, and productive of so much anxiety on the part of the patient ; the very name of punching out a tooth being sufficient to deter many from obtaining that relief which extraction alone can often afford.

I need only refer those, who are imperfectly acquainted with the subject, to the method of proceeding recommended in very difficult cases by the most esteemed author on dental surgery of the present day, viz. Mr. Bell, who, from his high character as a scientific man, and his rank in the profession, may be supposed to have given us the concentrated information of previous authors, combined with his own experience. Without referring, therefore, to any other, I shall briefly quote the passage

contained in his work. He says, "It has in a very few instances occurred in my practice, that the root was so far decayed as to render it impossible to reach it by the elevator, applied in the usual manner. In such cases I have successfully adopted the following method of bringing it away :—a crucial incision is made in the gum, as nearly as possible opposite to the apex of the root ; the gum is then separated from the bone, so as to expose a very small portion of it, which is to be cut away with the point of a strong knife, till an opening is made into the alveolar cavity, and the end of the root is exposed. By placing the point of the elevator between this and the bottom of the socket, the root may be forced out through the natural opening of the alveolar cavity."

Now, to say the best of it, this is a painful and tedious operation for the patient, and one that I, as a dentist, should be very unwilling to undertake ; for I am strongly disposed to consider it as unworthy of the present enlightened state of the surgical art.

All other works that mention the punch or elevator, speak also of the danger and difficulty attending its use.

Having met with several difficult cases, and having always entertained a particular dislike to employ an instrument so unscientific, painful, and dangerous, I was led to consider attentively the difficulties to be overcome, and the most certain and safe means of overcoming them,—feeling quite confident that an instrument might be constructed free from most, if not all, the objections to which the elevator is liable. I mentioned the subject in a conversation with Mr. Lemale, a very intelligent mechanical dentist, who immediately produced a small instrument, somewhat similar in principle, but differing in certain essential points, from the one I had contemplated making ; with this, therefore, and suggesting certain improvements to the instrument-maker, I have produced a forceps not only free from all the objections of the elevator, but possessing other very desirable qualities. I may venture to assert, that it is certain of removing any stump without the chance of breaking it, and certain of doing no mischief to the jaw-bone ; nor can it possibly slip and pass through the cheek or other soft parts (all which accidents may occur with the instruments hitherto in use, and the tooth be still left in the socket) ; added to which, it gives very little pain in its application ; lances the gum and removes the tooth nearly at the same moment ; requires very little time for its use ; does not obstruct the sight of the operator by the bleeding which takes place in ordinary lancing of the gum ; and, lastly, is perfectly harmless in the hands of even the ignorant and inexperienced. It is, moreover, very simple in its construction. I can particularly recommend such an instrument to the notice of the profession, and to country practitioners especially, as it renders the breaking of a tooth much less to be dreaded when such simple means of removing the stump are at hand.

Its use is applicable to all the incisors, canine, and bicuspid teeth, when either decayed or broken, and to the molars when the crowns are so far gone as to leave the roots separated, thereby rendering their removal by the elevator more difficult. Teeth, also, that grow irregularly, and are enclosed between, or placed behind, others, may be often removed more safely with these forceps, when no other will easily reach

them. It is necessary to have two of them for use ; one for the upper teeth, made straight, the other for the lower, bent at almost a right angle. I had wished to have accompanied my description with a drawing, but it would scarcely give a more correct idea of its form than can be done in words.

The straight instrument, then, is nothing more than a pair of forceps, about the length of the common pairs (five or six inches), with the blades hollowed out and smoothed, similar to a speculum auris, so as to slip easily by the side of the root, and converging towards the points, so as when closed to leave a conical space corresponding to the shape of the root, the edges at the points being perfectly sharp, like a knife. The manner, therefore, of using it is simply to insert their sharp edges between the root and its socket, keeping as close to the tooth as possible, and gently to insinuate the blades down on each side of it : however deep the stump, this is easily done, and my patients tell me with very little pain indeed. When deep enough to feel a secure hold, a slight rotation should be made, and the stump being loosened, is removed with the greatest ease and certainty.

The advantages of this over any other instrument that I have seen, or believe to be in use, are so palpable, that nothing more need be urged in favor of it : it is scientific in its principle of action, which certainly the punch is not. The cases which I have now treated with these forceps have been so completely successful, even beyond my most sanguine expectations, that I speak with confidence, and should feel the greatest pleasure in receiving a visit from any medical gentleman who would wish proof of its superiority over the old instrument ; for which purpose I would beg them to select the most difficult cases they can meet with (for the more difficult, the more satisfactory the result). My object is the simplifying, and rendering very much less painful, that much-dreaded operation, the extraction of stumps ; to discard from use entirely, if possible, that unscientific instrument, the punch ; and to substitute for it one that I look upon as a very valuable improvement in our branch of surgery. Whether or not I have succeeded, must be left to the consideration of all who are anxious to adopt, without prejudice, the safest and best means of alleviating the sufferings of their fellow creatures.—*Ibid.*

ON THE MOTIONS OF THE PUPILS.

BY THOMAS WHARTON JONES, ESQUIRE, SURGEON.

THE opening in the iris called the *pupil*, is subject to contraction and dilatation for the purpose of regulating the quantity of light admitted into the eye.

When contraction of the pupil takes place, the iris becomes broader in consequence of its pupillary edge moving to a greater distance from its fixed or ciliary margin. When, on the contrary, dilatation of the pupil occurs, the iris becomes narrower, its pupillary edge is elongated, and is drawn towards its fixed or ciliary margin.

Contraction of the pupil is produced by the impression of a strong

light on the retina, or of ordinary light when there is increased sensibility of the latter ; whilst weak light, or diminished sensibility of the retina to ordinary light, is the condition under which dilatation of the pupil takes place. In ordinary daylight, when the eye is not particularly employed, the pupil is commonly neither much contracted nor much dilated, but exists in a middle state.

Some physiologists ascribe the motions of the pupil to muscular contraction. They admit a circular muscle around the pupillary edge of the iris for the contraction ; and radiating muscular fibres, proceeding from the pupillary towards the ciliary margin of the iris, for the dilatation of the pupil. According to this view of the subject, dilatation of the pupil must be, like contraction, an active state of the iris.

Other physiologists, who do not admit muscular fibres in the iris, have supposed that it possesses an erectile structure,—that by an increased afflux of blood into which, the iris is distended, and the pupil in consequence contracted ; and that, when the blood retires, the vessels of the iris become empty, and dilatation of the pupil takes place in consequence of the contraction of the iris, by virtue of the elasticity of its tissue,—a property which is essential to all organs having an erectile structure, and subject to sudden dilatation and contraction. This opinion, it will be perceived, tallies with the idea generally entertained, that dilatation of the pupil is a passive state of the iris, and that it is that into which the pupil falls in paralysis of that organ.

But, it may be asked, “ Is dilatation of the pupil really a passive state, a state of relaxation of the iris ? ” To such a question I would answer, “ No.” On the contrary, I believe that dilatation of the pupil is as much an active state of the iris as contraction of the pupil is, and that the really passive state—the state of relaxation of the iris, is that in which the pupil is *neither much contracted or much dilated*,—a state in which the pupil is :

In the ordinary daylight, when the eye is not particularly employed ;

In simple paralysis of the iris, with sensibility of the retina ; and

Some time after death.

This middle state of the pupil is that to which it, by means of an inherent elasticity of the tissue of the iris, always returns after the contracting or dilating force has ceased to act. This tendency of the pupil to return to the medium state after the power which contracts the larger circle of the iris, and consequently dilates the pupil, has ceased to act, is well exemplified by the following experiment.

Lay open an eye by cutting it across, and remove the humors from the anterior segment, which place under water ; then introduce the point of a fine forceps with its blades closed into the pupil, and allow the blades slowly to separate—dilatation of the pupil will be by this means produced. If the forceps be now withdrawn, the pupil will be observed slowly to contract, until it resume the medium state in which it was before the experiment.

As to the nature of the structure in which reside the forces by which the iris is moved, I have already shown, that if the motions of the pupil were produced by an erectile structure of the iris, dilatation of the pupil must necessarily be a state of relaxation of that body, which I have

demonstrated not to be the case, consequently the motions of the pupil are not produced by an erectile structure of the iris.

Although muscular fibres, such as occur in other parts of the body, cannot be demonstrated in the iris by the aid of the microscope, still circular and radiating fibres may be seen, which bear a considerable resemblance to those of muscle. Whatever the structure may be, I would only observe with regard to its action, that its contractile force need not necessarily be so great as that of muscle, because the iris being suspended in a watery medium, less power is required to move it than if it were suspended in air, in consequence of the resistance of its own weight being thus in a great measure removed.

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COLD AFFUSIONS IN SCARLET FEVER.

In scarlet fever cold affusions afford a very useful resource, and are often followed by excellent effects. They are especially indicated when there exists a burning heat over the whole body, insupportable to the patient, agitation and profuse sweating; also when the disappearance of the eruption has augmented the principal symptoms, and given rise to symptoms of cerebral congestion. In all these cases affusions will be useful. To fulfil this indication, the patient must be placed in a bath-room, the feet immersed in warm water, and the head or back affused with the same liquid at the temperature of 60° to 70° Fahr. The affusion must be repeated more or less frequently, according to the state of the patient's strength. In general, prompt relief follows the employment of this means; the eruption often disappears, and the nervous symptoms are dissipated. Affusions, on the contrary, are improper when the patient does not experience heat; still more when he complains of cold, whatever may otherwise be the severity of the symptoms which are present.

If from unreasonable resistance on the part of the patient or his family, or any other circumstance, the affusions cannot be employed, it will be proper to bathe the head, forehead and face with sponges dipped in cold water; but this means is much less efficacious than the other. Still in puerperal women having scarlatina, when there exists bronchitis more or less intense, the coincidence of this bronchitis with the puerperal state must render us very circumspect in regard to employing affusions; it is then better to limit them to the head, or to be satisfied with the plan already suggested, of bathing the parts with a sponge.

Warm baths, though much less energetic in their action than cold affusions, may be used with advantage toward the decline of the eruption, when the skin still retains its heat and dryness; likewise when the eruption grows pale and seems about to disappear, a warm bath will often recal it, diminish uneasiness, prevent nervous symptoms, and give an easier and more favorable issue to the malady.

ENDERMIC MEDICATION.

THE sedative and relaxing effects of certain narcotic substances, and particularly of belladonna, when applied externally, have now been so frequently remarked, that scarce a doubt can remain in regard to the fact, even in the most sceptical. Still, as observations of this kind must continue to possess a strong interest for the profession, we venture to offer the following, furnished to one of the journals by a provincial physician in France.

"I was called," he observes, "the 8th of July, 1833, at 8 in the evening, to a domestic aged 25 years, who, since the morning, had experienced severe pain in the abdomen, accompanied by vomiting. I soon ascertained that these symptoms arose from a strangulated inguinal hernia of the right side. I attempted, but in vain, to effect its reduction. I then bled to two pints, applied thirty leeches on the tumor, and had the patient placed in a warm bath, where he remained two hours. At night I again saw him, but there was no improvement. In the morning the pupil was contracted, the pain excessive, the vomitings continual; the tumor was hard, painful, and increased in size; the patient frequently fainted. I proposed the operation to the patient and to the family. It was obstinately rejected. I now considered death as inevitable. Still remembering that the extract of belladonna had sometimes succeeded in facilitating the reduction of ruptures, I had the tumor covered with a drachm of this substance, which was renewed six hours afterward. The day and night which followed, passed in extreme agitation; at the commencement of the third day, when I saw the patient, his state appeared to me desperate; I found indeed the tumor less hard, but this I referred to the gangrene of the intestine; however, I directed the belladonna to be continued in the same quantity every six hours. What was my astonishment, when at 7 in the evening they came to inform me that my patient was cured, that the intestine had returned, that he had been five or six times to the water closet, and that his vomiting and pain had ceased. I saw him and found that the statement was strictly correct."

This important fact ought to be known. It was fortunate for this patient; but it will be still more so for humanity, if it leads to the employment of the belladonna in similar cases, and if it shall continue to be followed by the like happy effects.

DIGITALIS.

IN a paper contributed to the *Journal Therapeutique* by M. Sandras, we have a series of experiments on the effects of this substance, from which the author arrives at the following conclusions:—

1. This substance exerts on the digestive passages an irritant action, the more dangerous as it does not always show itself in the same doses, nor after an equally protracted use of the medicine, but always certain when we wish to force the doses, either by giving them too large at first, or by graduating them with too little precaution.

2. It also acts manifestly on the nervous system, of which it greatly troubles the central functions, and also, it must be confessed, in doses very variable and even very small.

3. That the nature of this action somewhat resembles that of morphine.

4. That the property of retarding the pulse is often manifested even when this substance is employed in moderate doses ; that this effect takes place more certainly when these doses are somewhat raised, whereas we often see the pulse accelerated when we confine ourselves to very small quantities.

5. The diuretic property of digitalis is not confirmed by these observations, since it is seldom manifested, and then in cases in which an accumulation of liquid must necessarily pass by some outlet, and might, therefore, take that of the urinary passages independently of any special action of the digitalis.

6. Nothing of what was observed goes to maintain either the sudorific or the aphrodisiac qualities of digitalis.

DR. CUTTER'S RETREAT.

We have several times had occasion to notice the very pleasant and salubrious retreat of Dr. Cutter, at Pepperell, which has already contributed much to the comfort and relief of the insane and the invalid. We are gratified to learn that he has added to his establishment, for purposes of exercise and amusement, the *flying horses*, by means of which patients may exercise freely, without exposure to the public eye ;—also an artificial pond and bathing house, which are supplied from a brook passing through the place ; a bowling alley, swing, and other means of agreeable exercise.

The persons admitted to this establishment are the partially insane, the dyspeptic, and invalids of every description, including the intemperate, whose habits he hopes to improve by moral and physical discipline.

Remarkable Malformation of the Heart and its Great Vessels.—In August, 1825, Dr. Holst, of Christiania, examined the body of a female child, aged 7, who had expired in a paroxysm of suffocation, after having, from her second year, exhibited all the symptoms of cyanosis. These had at first been slight, but gradually increased in intensity, till at last death put an end to the patient's sufferings. The following was the result of the examination :—

The heart was unusually large, and the pericardium contained about half an ounce of serum. The right ventricle was about twice as large as the left, and its columnæ carneæ were much stronger. In the upper part of the septum of the ventricles was an aperture, about half an inch in diameter ; just beside this aperture the aorta and pulmonary artery arose, both from the right ventricle, the latter somewhat upwards and forwards ; they were each about a third less in volume than usual. The right auricle was larger, and its bundles of muscular fibres stronger than ordinary ; the left was uncommonly small, and the foramen ovale open, as in the fœtus. The valves were all natural.

The aorta gave off from its arch, three distinct and remarkably large arteries, namely, the right subclavian, the right carotid, and the left carotid ; but there was no left subclavian. It then diminished considerably, and below the arch was of but half its former size.

The left arm was next examined for the brachial artery, which was found, and traced to the thorax, where, as the left subclavian, it suddenly terminated at the second dorsal vertebra, almost an inch from the aorta. The subclavian portion gave off the usual branches : its vertebral artery

was even remarkably large, passing from below upwards, and somewhat inclining to the left.

The pulmonary artery, which was very small, gave off from its left branch, from the same place where the ductus arteriosus is generally found, a canal, two inches long, which likewise went upwards and towards the left side, and entered the left subclavian, at almost the right angle. This canal was small, but pervious.

The lungs were small, but natural: the thymus, on the contrary, was remarkably large, and appeared to have increased with the growth of the individual, instead of diminishing.—*Edin. Med. and Surg. Jour.*

Treatment of Porriço. By Mr. MACILWAIN.—Mr. Macilwain maintains *porriço* to be a constitutional affection, inasmuch as, among the thousand of cases which he has treated, there have been very few which did not exhibit some unequivocal indication of disordered health. Keeping this in view, he directs a considerable part of his attention to constitutional means. The diet recommended is farinaceous food in moderate quantities. He deprecates the exhibition of drastic purges; but recommends that the bowels should be gently, though efficiently evacuated, and a course of mild alteratives afterwards prescribed. It is important to ascertain the organ primarily affected, and to restore it to a healthy state. Should it, however, prove obstinate, it must be attacked through other organs with which it sympathizes. The local treatment consists of shaving the head, and keeping it closely shaved, washing it with soap and water, and applying lightly to the affected surface, by means of a camel's hair brush, some unctuous unirritating substance. The ointment, first softened by heat, should be applied so lightly, that the affected part should appear as if lightly oiled. The dressing may be repeated night and morning,—sometimes only once a-day,—but the affected parts should be always well washed with soap and water previous to being dressed. This will always effect a cure, but the process may be accelerated by using a slightly stimulating ointment, consisting at first of a drachm of the citrine ointment to the ounce of lard, afterwards gradually increasing the strength. Stimulating, sedative, or astringent lotions, or those supposed to combine these qualities, have not been found beneficial by Mr. Macilwain, who trusts principally to constitutional treatment.—*From Clinical Observations on the Constitutional Origin of the Various Forms of Porriço.* London, 1833. *Edin. Med. and Surg. Jour.*

Compression of the Brain without bad Consequences—Cure.—A very extraordinary case presented itself some time ago here in the person of a lad about twelve years of age, who met with a fall so violent as to cause an indentation in the cranium, about the junction of the frontal with the right parietal bone. The peculiarity of the case consists in the complete absence of any of the symptoms of compression of the brain. The boy suffered no ill effects whatever from the accident, nor were the constitutional functions in the least damaged. During his stay in the hospital, his head was shaved, and he was put on low diet. He was in a few days discharged, apparently in the most perfect health.

London Medical and Surgical Journal.

RECORD OF METEOROLOGICAL OBSERVATIONS FOR MAY, 1834.

1834. May.	THERMOMETER.			BAROMETER.			Winds.	Appearance of the Atmosphere.	Rain in inches.	Moon's Phase.	Remarks.
	Min. therm.	Max. therm.	Mean.	Min. barom.	Max. barom.	Mean.					
Thur. 1.	43.50	61.50	52.50	29.53	29.79	29.680	N W	Cumuli.			Thulapi bur-pas, shepherd's purses, in bl. m.
Frid. 2.	42.50	60.50	49.00	29.50	29.90	29.850	E	Fair.			Ribes rubrum et grossularia, currants and strawberries.
Sat. 3.	43.00	60.50	51.75	29.92	30.00	29.960	N W	Cumuli.			
Sun. 4.	46.50	61.50	54.00	30.05	30.15	30.085	N W	Cumuli.			
Mon. 5.	45.00	56.50	51.75	30.13	30.15	30.135	S E	Cirro-cumuli.			Cir-c-str. a. Severe gale. Rain thro' night.
Tues. 6.	44.00	49.50	46.75	29.85	29.72	29.785	S E-N E	Cirro-cumulo-stratus.	1.78		Rain continues, and severe gale.
Wed. 7.	43.00	44.00	43.00	29.60	29.79	29.700	N E	Cirro-cumulo-stratus.	.52		Rain. S E, m.
Thurs. 8.	41.50	62.00	51.75	29.63	29.50	29.740	W	Cirrus.	.02		Rain, a.
Frid. 9.	41.50	63.00	57.25	29.73	29.90	29.825	N W	Cumulus.			Cumuli. m.
Sat. 10.	49.00	46.50	46.25	29.72	29.85	29.785	N E	Cirro-cumulo-stratus.	1.30		Rain. Ther. 41° 50 at noon.
Sun. 11.	44.00	66.00	55.00	29.60	29.92	29.760	S W	Cumulus.			Stratus, m. Rain, a. Nimbus at night.
Mon. 12.	48.00	59.50	53.75	29.50	29.50	29.500	N W	Cumuli.	.40		Rain, m. Cumulus, a.
Tues. 13.	39.50	54.00	46.75	29.55	29.80	29.675	N W	Cumulus.			America vulgaris.
Wed. 14.	35.00	55.50	45.25	29.90	29.98	29.940	S W	Cumulus.			Hirundo polargia of W., swallows appear.
Thurs. 15.	32.00	41.50	36.75	29.83	30.13	30.000	S W	Cumuli.	.01		Rain, m. Ice. N W, a.
Frid. 16.	36.50	56.00	46.25	30.16	30.20	30.180	S E	Cumuli.			
Sat. 17.	40.00	63.00	51.50	30.22	30.25	30.235	S W	Cumuli.			Ranunculus acris in bloom.
Sun. 18.	46.50	73.50	60.00	30.29	30.32	30.300	S E	Cirri.			
Mon. 19.	52.00	64.00	68.00	30.05	30.24	30.145	S E	Cirro-cumulo-stratus.			
Tues. 20.	55.00	64.00	65.50	30.55	30.13	30.035	S E	Cirri.	.01		Syringa vulgaris, lilac, in bloom.
Wed. 21.	60.50	80.00	65.25	29.55	30.15	30.140	W	Fair.			Nimbus a. Rain at night.
Thurs. 22.	65.50	70.00	62.75	30.10	30.18	30.140	S E	Cirro-cumulo-stratus.			E. m. Narcissus jonquilla in bloom.
Frid. 23.	51.00	48.00	48.50	30.12	30.13	30.125	S E	Cumulus.	.32		Thermometer 46° a. [30, nimbus, night.
Sat. 24.	46.00	77.50	61.75	29.75	30.12	29.935	S E	Cirro-cumulo-stratus.			Stratus, a. Rain, m. [22, Trifol. prat. clover.
Sund. 25.	55.00	51.00	53.50	29.78	29.90	29.900	E	Cirro-cumulo-stratus.	.01		Stratus, m. Thermometer 46° a.
Mon. 26.	49.50	57.50	53.50	29.83	29.92	29.880	E-N E	Stratus.			Rain, a.
Tues. 27.	50.00	61.50	55.75	29.62	29.88	29.850	E	Cirro-cumulo-stratus.	.01		Thermometer 46° a. Rain last night.
Wed. 28.	49.00	53.50	50.25	29.30	29.94	29.940	N E	Cirro-cumulo-stratus.			
Thurs. 29.	46.00	48.50	47.25	29.88	29.95	29.915	N E	Cirro-cumulo-stratus.	.60		Rain, a, and through the night.
Frid. 30.	51.50	48.75	49.90	29.90	29.90	29.900	N E	Cirro-cumulo-stratus.			
Sat. 31.	46.50	63.50	55.00	29.90	29.90	29.900	N E	Cirro-cumulo-stratus.			
A aggregate.	45.870	59.419	52.419	29.576	29.989	29.925	S E	Cirro-cumulo-stratus.	5.48		

Baromet. - Mean temperature 52.419. Minimum on the 15th, wind S W, 64.00. Maximum on the 15th, wind S W, 32.00. Greatest daily variation on the 15th, wind S W, 32.00. Range of barometer, 0.82. Therm. - Mean temperature 52.419. Minimum on the 15th, wind S W, 64.00. Maximum on the 15th, wind S W, 32.00. Greatest daily variation 24th, wind S E, 0.37. Least daily variation 15th, wind N W, 0.06. Range of barometer, 0.82. Decreases from last month, 0.0930. - Prevailing atmosphere, cirro-cumulo-stratus (cloudy). Prevailing wind, S E. Rain, in inches, 5.48. An extremely unpleasant and disagreeably cold month.

For Independence, Boston Harpur, Mass. June 1, 1834.

J. A. BREKTON.

Fresh Prepared Carbonate of Iron.—Doctor Büchner and Dr. Richter both attest the efficacy of this mineral salt, even in cases of neuralgia, where common, not recently prepared, carbonate of iron had failed. The mode of administering the remedy is as follows: twelve grains of crystallized sulphate of iron are to be mixed with six grains of dried carbonate of soda, and dissolved in half a cupful of water, slightly sweetened with sugar: this dose to be taken three times a day. It is equivalent to five grains of carbonate of iron, and operates as an anti-neuralgic medicine, much more powerfully than larger quantities of the carbonate of iron as sold in the shops.—*Dublin Journal*.

Convulsions from the Cutting of Wisdom Teeth.—Dr. Ashburner relates many cases of convulsions in young persons, from 18 to 24, caused by the slow and painful protrusion of the wisdom teeth. He uniformly succeeded in curing the patient, by freely scouring the gum, and softening the appearance of the tooth.—*Lon. Med. Rev.*

Balsam of Honey.—Take of Gum Bezoin, 5 oz. Balsam Tolu, 1 oz. Honey, f 8 oz. Alcohol, 3 pints. Digest for 10 days and filter.
Journal of the Philadelphia College of Pharmacy.

The Massachusetts Medical Society met in this city on Wednesday last. Dr. Zádóc Howe gave the address ON QUACKERY, in which he proposed the forming of an Anti-Quackery Society, to be aided in its operations by a committee of analysis, who should examine and report on patent medicines for the information of the public.

In answer to a complaint made to the postmaster of the distributing office in Hartford, respecting the irregular receipt of the Medical Journal by subscribers in Connecticut, we have been assured that no exertions will be spared by him to discover and remedy the evil complained of. He recommends that those subscribers who do not receive the work regularly should write to him, stating the mail routes by which their numbers are received, and immediate attention will be given to their complaint.

We are gratified to learn that Dr. Hooker has perfectly recovered from his severe and protracted sickness (Erythema anatomicum), and that a continuation of his "Essay on the Diseases of the Heart" may be soon expected. A paper from him "On the Medicinal Principles and Properties of Ergot," will appear in our next.

Whole number of deaths in Boston for the week ending June 6, 30. Males, 14—Females, 6.

Of erysipelas, 1—scarlet fever, 1—apoplexy, 1—bursting bloodvessel, 1—consumption, 3—inflammation of the bowels, 3—droupy on the brain, 1—lung fever, 1—inflammation on the brain, 2—old age, 1—diarrhoea, 1—throat distemper, 1—suicide, 1—drowned, 1.

ADVERTISEMENTS.

MEDICAL ADVERTISEMENT.

Is any reader of this Journal, who resides in New England or New York, will send a Bank-bill—one dollar only—in a letter, *per mail, post-paid*, to the subscriber in New London (Con.), he will send to them, as agents for their friends, four pamphlets; namely, his "Pilgrim's Progress, or John Gilpin's Race in Phrenology," published by Samuel Green. It shall be the subscriber's endeavor not to cheat much, if he cannot suit every one.

New London, Ct. June 4, 1834.

ELISHA NORTH, M.D.

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As assortment of Surgical Instruments for sale at No. 35 Washington Street, five doors south of Cornhill, by A. P. RICHARDSON.

Surgical Instruments made and repaired as above. Orders forwarded will meet with punctual attention.

Feb 19

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